APL Exercise #6

56:272 Integer Programming & Network Flows
Fall 1997

Classical Transportation Problem

Load the APL68000 Level II workspace **Transport** and randomly generate **10** different transportation problems (without capacity restrictions on X_{ij}), each with **6** sources and **10** destinations. For each random problem, answer the following in the table below:

a. What random number seed was used?

b. Apply VAM to get an initial basic feasible solution (not necessarily optimal). What is its cost?

c. Find the optimal solution of the problem.

Note: The VAM solution and the optimal solution can each be obtained by indicating a choice on the "Solve Problem" menu item.

d. Is the VAM solution optimal?
If not, how close to the optimal cost (as a % of the optimal cost) was it?

Record the results here:

Problem #	Random Seed	VAM sol'n	Optimal sol'n	Error (%)
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____
10	_____	_____	_____	_____

Minimum error: _____ % Maximum error: _____ %

Mean error: _____ %

% of problems for which VAM solution is optimal: _____ %